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CHROMOSOME NUMBER IN *THAMINOPHYLLUM* (ASTERACEAE-ANTHEMIDEAE)

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ABSTRACT

A chromosome number of $2n = 20$ has been found in all three species of *Thaminophyllum* (Asteraceae-Anthemideae) a small genus endemic in the Caledon district of the southwestern Cape. This number links *Thaminophyllum* more closely to *Inezia* ($n = 10$) than to other southern African Anthemideae for which chromosome numbers are known such as *Eriocephalus* which has $n = 9$. This number is also unusual in Anthemideae for which $n = 9$ and multiples are frequent.

UITTREKSEL

CHROMOSOOMGETAL IN *THAMINOPHYLLUM* (ASTERACEAE-ANTHEMIDEAE)

Chromosoomgetal van $2n = 20$ is gevind vir al soorte in die geslag *Thaminophyllum* (Asteraceae-Anthemideae) wat endemies in die Kaledon-distrik van die suidwes-Kaap voorkom. Hierdie getal verbind *Thaminophyllum* baie nouer met *Inezia* ($n = 10$) as met enige ander Suider-Afrikaanse Anthemideae waarvoor chromosoomgetalle bekend is; bv. *Eriocephalus* het $n = 9$. Hierdie getal is ook ongewoon in Anthemideae waar $n = 9$ en meervoude daarvan volop is.

INTRODUCTION

In collaboration with Pauline Bond, who has recently completed a revision of *Thaminophyllum* (Asteraceae-Anthemideae) (Bond, 1980), I undertook a chromosome study of the genus, until now cytologically unknown. *Thaminophyllum* is a genus of small shrubs comprising only three species, and is restricted to the mountains of the Caledon district of the southwestern Cape. It is allied to a distinctive group of southern African Anthemideae amongst which are *Lidbeckia*, *Inezia*, and, perhaps more distantly allied, *Adenanthellum*, *Eumorphia*, *Phymaspermum*, *Lasiospermum*, and *Eriocephalus*.

MATERIAL AND METHODS

Plants studied were wild collected cuttings (Table 1), rooted under mist spray conditions. Only mitotic chromosome counts were made. Root tips, collected at midday were placed in saturated aqueous p-dichlorobenzene solution for 6 hours, at refrigerator temperatures, then fixed in Carnoy's 3:1 ethanol-acetic acid. After a 6 minute hydrolysis in 10% HCl at 60 °C, root tips were squashed in lacto-propionic orcein (Dyer, 1963).

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TABLE 1.

Chromosome numbers in *Thaminophyllum*. All localities are in the Cape Province, South Africa, and voucher specimens are housed at the Compton Herbarium, Kirstenbosch Botanic Gardens, Cape Town (NBG)

Species	Haploid Number	Collection Data
T. latifolium	10	Caledon district, Voëlklip, Hermanus, above 8th Avenue, *Bond 1697.*
T. mundii	10	Caledon district, lower area of Highlands Forest Reserve, *Goldblatt 4771.*
T. multiflorum	10	Caledon district, Houw Hoek, *Goldblatt 4982.*

RESULTS AND DISCUSSION

Plants studied all had a similar karyotype with fairly large, acrocentric chromosomes, and a diploid number of $2n = 20$. This number is unusual in the Anthemideae, most genera of which have $n = 9$ (Heywood & Humphries, 1978) or multiples on this base. Amongst the African genera with which *Thaminophyllum* is allied, *Eriocephalus* has $x = 9$ (Nordenstam, 1967, 1969), *Lasiospermum* both $n = 10$ and 9 (Nordenstam, 1967), *Inezia* $n = 10$ (Turner & Lewis, 1965) and *Adenanthellum* (= *Adenanthemum:* Nordenstam, 1979) $2n = 30$ (Nordenstam, pers. comm.). Counts are unfortunately lacking for most relatives including *Eumorphia, Phymaspermum, Lidbeckia, Osmitopsis*, and *Peyrousia*.

On the basis of rather meagre chromosomal data, the number in *Thaminophyllum*, $n = 10$, supports Phillips' (1932) suggestion that the genus is probably more closely allied to *Inezia* (and to the uncounted *Lidbeckia*) than to *Eriocephalus*. The number of $n = 15$ *Adenanthellum* ($2n = 30$) is problematic, but this number may be triploid based on $x = 10$, which would link this genus to the $n = 10$ group of Anthemideae including *Thaminophyllum* and *Inezia*. *Lasiospermum*, in which both $n = 10$ and 9 are recorded, may possibly be related, but morphology suggests that this genus is closer to *Eriocephalus* than to other genera of southern African Anthemideae. Clearly many more counts are needed before full use can be made of cytological data in evaluating generic relationships and evolution within the group.

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